

The PV Transfer software handles the automatic offload of Event videos from body cameras and allows users to request non-Event videos from the cameras to be transferred automatically when docked.

The PV Transfer software requires an application to be installed on a server to handle the device authentication and file storage processes. The server running the software must be accessible to the LAN that the docking station(s) will be connected to and will have either a large internal storage disk or access to a network storage device to store the video files that are transferred.

Once the software is setup and devices are configured, each time the cameras are docked they will connect to the server and uploaded files. The software utilizes a web-based (HTTPS) transfer protocol to handle the file transfer process and can be done over a local network or over an internet connection if the server is properly configured.

Each client PC that will be reviewing and requesting video will need the PV Transfer client software installed and the server URL configured within the settings. This software application is only needed to request non-event videos.

### **Preparing for the Camera Deployment**

This document should be provided to the IT professional that will handle the software installation and network configuration. Assistance from an IT professional or equivalent is required for the installation and configuration of the PV Transfer software as advanced technical knowledge of the existing computer hardware, software, and network configuration is required. It is recommended to prepare and have the PV Transfer server software installed and network access confirmed prior to deployment of body cameras, as this will allow the cameras to be registered to the server and assigned as they are being deployed.

### **Setup Process:**

The agency's IT professional will need to complete some steps in preparation for the product installer:

1. IT will open the provided USB disk to read and understand the guide.
2. IT will install the PV Transfer software on the computer/server per the instruction guide:
  - a. Configure the storage location and check permissions.
  - b. Start the PV Transfer service.
  - c. Set up device Config Profiles for camera settings
  - d. Set up BODYCAM 4 docking station(s) by connecting power and ethernet to a network port with access to the server.
3. Register and assign cameras:
  - a. Remove a camera from packaging and power it on.
  - b. Open the "Add new BODYCAM 4 device" page in the PV Transfer web interface on the server.
  - c. Aim the camera lens at the QR code displayed on the computer screen and press F1 on the camera to scan it. This QR code contains the server address on the network so the BODYCAM can communicate with it.
  - d. After the QR code is scanned, dock the camera in the docking station.
  - e. Camera will contact the server and the device will show up in the PV Transfer "Add BODYCAM" web page.
  - f. Select the device, add a username, select the desired config profile, and click "Complete Setup".

### **System Operation:**

When the camera establishes network connectivity (when docked), it contacts the server and begins transferring all Event video files (oldest first). The server will automatically store the transferred files in the configured storage location in an easy-to-understand folder and naming structure. The transfer software has an API that allows the user of the PV Transfer client software to request videos from time periods that were not triggered as Events. These requests will also be sent to the camera unit upon connection and queued for transfer along with the Event video files.

---

**Computer/Server:**

The PV Transfer software is a lightweight software package that runs as a service on a Microsoft Windows operating system. The services host a web interface on a port of the server, the port number is configurable and can be made accessible through the firewall for remote uploads over the internet. The service must be configured with user permissions to have read/write permissions to the desired storage location. The software must be installed on a computer running either Windows 10 or newer or a server running Server 2012 or newer with a minimum 2GB RAM, 3Ghz processor, 200MB disk space available for software and database, and a large storage device connected to the computer directly or through the network for video file storage (see below for storage requirements).

---

**Client/User Computer:**

Client computers will review transferred video using the default media player installed on their computer. PV Transfer Client software is needed for client computers to make video requests for videos that were not marked as events. To access the transferred files, the client computers must have permissions to the storage destination for the transferred files used by the transfer server software. They must also have access to the same web service/port that is required for DVR connection. The PV Transfer client software requires a computer running Windows 7, 8, or 10 with a minimum of 2GB RAM. It is recommended that the client computer have a 1080p display and speakers to properly play back video.

---

**Network Requirements:**

Each BODYCAM 4 device requires its own IP address when docked. The dock itself does not have an IP address, but each bay has its own Media Access Control (MAC) address. The bottom label of the docking station contains the list of MAC addresses for each bay.

Dynamic Host Configuration Protocol (DHCP) should be used to provision the IP address and network configuration for each device. Static IP addresses are not supported, as the devices could be docked in various locations with different IP configurations. Each BODYCAM 4 docking bay functions as an ethernet card, with its own MAC address. The multi-dock acts as a network switch, routing each of the camera ethernet connections through a single connection to the network.

The camera is capable of uploading at 64Mbps per device if not regulated by network administrators. There is no Quality-Of-Service (QOS) control on the docking station or camera; it is not possible to set upload bandwidth restrictions on the devices. If your agency requires upload bandwidth-limiting, it is recommended to deploy rate-limiting restrictions in your layer-3 networking infrastructure as needed. Your network switches will have an aggregated view of devices and traffic, and can allocate all available bandwidth to a single device or small number of devices when they are the only ones with uploads queued, while limiting the total bandwidth when large numbers of devices are uploading at once. It is especially recommended to implement a QOS if the internet connection's upload speed is low; without QOS, camera uploads could use all available bandwidth, preventing other services relying on the network connections to stop performing correctly.

The network configuration requires the camera's network interface to have a direct connection to the server, use of proxy servers are not supported.

---

**Security:**

The BODYCAM 4 devices and docks are network connected devices and should only be installed on networks trusted by the agency in accordance with agency policy. **DO NOT** expose the BODYCAM 4 devices or docks directly on the Internet. The BODYCAM 4 devices and docks must be connected behind a firewall or secure network to prevent unauthorized connections being initiated from the Internet or from clients not trusted by the agency.

---

**Firewall Configuration:**

The BODYCAM 4 devices and docks do not require any incoming data ports for regular operation. Outbound firewall ports must be opened for proper operation depending on the software used. Port 5004 (TCP) must be opened for outgoing traffic to your server's external address. This is used to upload data to the server using the HTTPS protocol.

Note: 5004 is the default port for PV Transfer and can be changed during software setup

**Storage Space:**

---

The following factors are needed to calculate required storage space:

- Recording quality (Bitrate) in GB/hour/camera
  - 1.6 GB/hour/camera at 1080p 30fps
  - 0.8 GB/hour/camera at 720p 30fps
- Expected number of hours of video to be saved per day
- Number of cameras
- Number of days each camera is used
- Number of weeks to retain transferred video.

BODYCAM 4 devices are capable of recording 0.8GB of video per hour at the default 720p setting.

**Example:** 8 cameras, capturing and storing 2hrs of video per day, 5 days a week, for 52 weeks would equal about 3,328GB (3.3TB) at the default setting (0.8Mbps).

**Formula:** **0.8GB/hour/camera x 2 hours x 8 cameras x 5 days x 52 weeks = 3,328GB**